

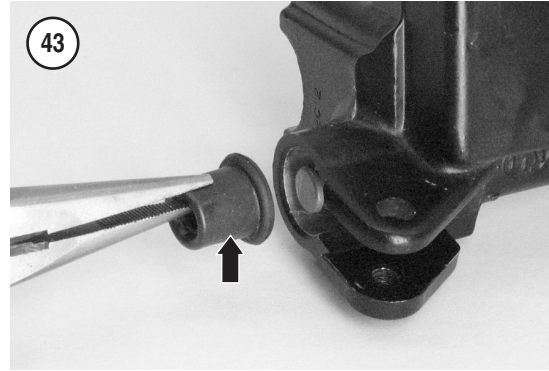
allow the cups to turn inside out as this damages them and allows brake fluid to leak out of the bore.

3. Install the spring and piston assembly into the master cylinder bore in the direction shown in **Figure 38**. Make sure the cups did not turn inside out.
4. Push the piston in and hold it in place, then install the snap ring (**Figure 37**) into the cylinder bore groove. Install the snap ring with its flat edge facing out (away from the piston). Make sure the snap ring is fully seated in the bore groove. Push and release the piston a few times. It should move smoothly and return under spring pressure.
5. Install the dust boot into the end of the cylinder bore. Seat the large boot end against the snap ring. Seat the small boot end into the groove in the end of the piston (**Figure 43**). Make sure it is correctly seated in the cylinder bore (**Figure 35**).
6. Install the brake lever as follows:
 - a. Install the brake lever and its pivot bolt. Tighten the pivot bolt to 6 N•m (53 in.-lb.). Operate the brake lever, making sure it moves smoothly.
 - b. Install the brake lever nut. Then hold the pivot bolt and tighten the nut to 6 N•m (53 in.-lb.). Operate the brake lever again, making sure it moves smoothly with no roughness or binding.
7. Temporarily install the master cylinder cover assembly.
8. Install the master cylinder as described in this chapter.

BRAKE FLUID DRAINING

Drain the brake fluid before disconnecting any of the front brake hoses or lines. To drain the front brake system, obtain an empty bottle, a length of clear hose that fits tightly onto the wheel cylinder bleed valve, and a wrench to open and close the bleed valve (**Figure 44** and **Figure 45**). A vacuum pump (**Figure 46**) can also be used to drain the brake system.

1. Turn the handlebar so the front master cylinder (**Figure 32**) is level with the ground.
2. Remove the reservoir cover and diaphragm assembly.
3. Connect a hose to one of the wheel cylinder bleed valves. Insert the other end of the hose into a clean bottle. See **Figure 44**.



4. Loosen the bleed valve and pump the brake lever to drain part of the brake system.
5. Close the bleed valve when fluid stops flowing through the valve.
6. Repeat Steps 4-6 for the other side. Because air has entered the brake lines, not all of the brake fluid will drain out.

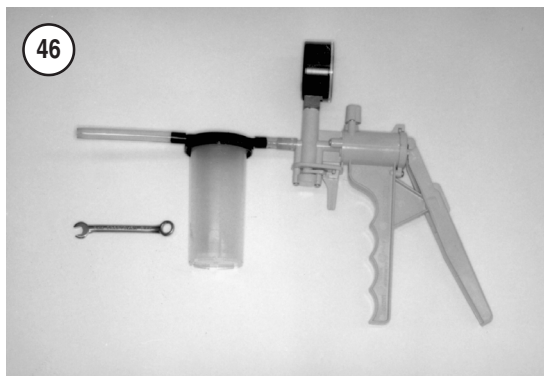
NOTE

Because some residual brake fluid will remain in the lines, be careful when disconnecting and removing the brake hoses in Step 9.

7. Reinstall the diaphragm assembly and reservoir cover.
8. Perform the required service to the front brake system as described in this chapter.
9. After servicing the brake system, bleed the front brakes as described in this chapter.

BRAKE BLEEDING

Bleed the front brakes when they feel spongy, after repairing a leak or replacing parts in the system, or when replacing the brake fluid.



This section describes two methods for bleeding the brake system. The first requires a vacuum pump (**Figure 46**), and the second requires a container and a piece of clear tubing (**Figure 44**).

1. Remove the dust cap from the bleed valve on the wheel cylinder.
- 2A. When using a vacuum pump, assemble the pump by following the manufacturer's instructions. Connect the vacuum pump hose to the wheel cylinder bleed valve.
- 2B. When a vacuum pump is not being used, perform the following:
 - a. Connect a piece of clear tubing onto the bleed valve (**Figure 45**).
 - b. Insert the other end of the tube into a container partially filled with new brake fluid. Tie the tube in place so it cannot slip out of the container.
3. Clean the master cylinder cover of all dirt and foreign matter.
4. Turn the front wheels so the master cylinder (**Figure 32**) is level with the ground.

5. Cover the area underneath the master cylinder with a heavy cloth to protect the parts from accidentally spilled of brake fluid.

CAUTION

Wash spilled brake fluid from any plastic, painted or plated surface immediately as it will destroy the finish. Clean with soapy water and rinse completely.

6. Unscrew and remove the master cylinder cover and diaphragm assembly.
7. Fill the master cylinder with DOT 4 brake fluid.

WARNING

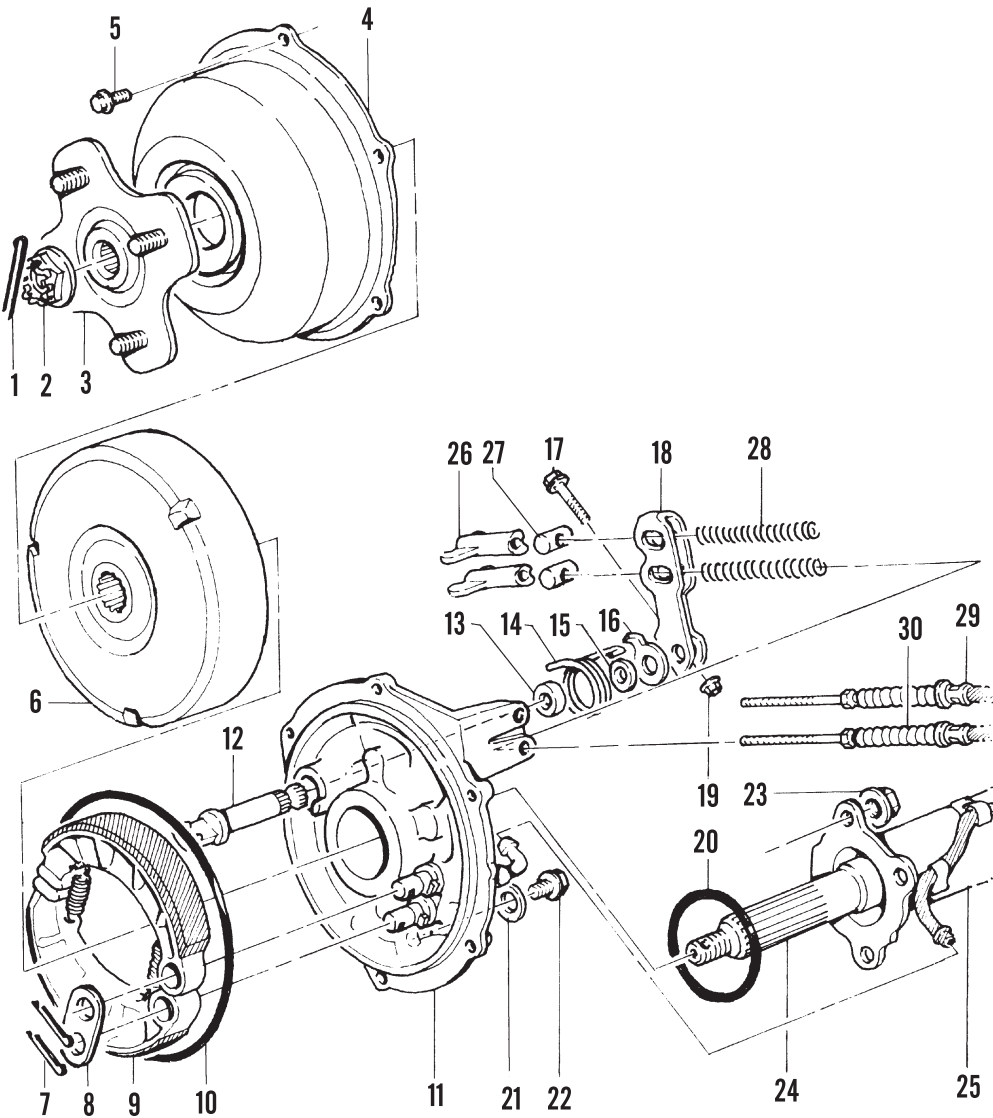
Use DOT 3 or DOT 4 brake fluid from a sealed container. Do not intermix different brands of fluid. Do not use a silicone based DOT 5 brake fluid as it can damage the brake components, leading to brake system failure.

NOTE

When bleeding the front brake, frequently check the fluid level in the master cylinder. If the reservoir runs dry, air will enter the system. If this occurs, the entire procedure must be repeated.

- 8A. When using a vacuum pump, perform the following:
 - a. Operate the vacuum pump several times to create a vacuum in the attached hose.
 - b. Open the bleed valve 1/4 turn to allow extraction of air and fluid through the line. When the flow of air and fluid starts to slow down, close the bleed valve.
 - c. Operate the brake lever several times and release it.
 - d. Refill the master cylinder reservoir as necessary.
 - e. Repeat Step 8A for the opposite brake line.
 - f. Repeat Step 8A until there is a solid feel when the brake lever is operated and there are no bubbles being released from the system.
- 8B. When a vacuum pump is not being used, perform the following:
 - a. Operate the brake lever several times until resistance is felt, then hold it in its applied position. If the system was opened or drained

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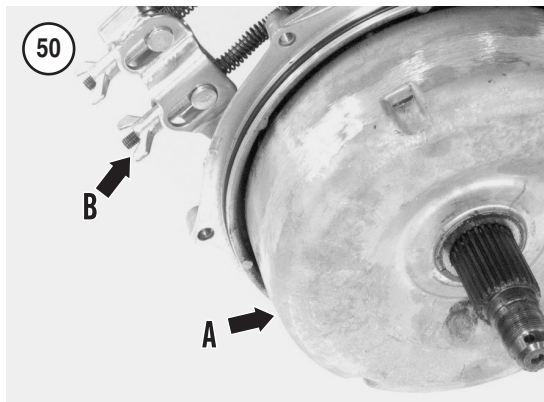
REAR BRAKE

1. Cotter pin
2. Axle nut
3. Wheel hub
4. Drum cover
5. Bolt
6. Brake drum
7. Cotter pins
8. Washer

9. Brake shoes
10. O-ring
11. Brake panel
12. Brake cam
13. Dust seal
14. Return spring
15. Felt washer
16. Indicator plate

17. Bolt
18. Brake arm
19. Nut
20. O-ring
21. Washer
22. Drain plug
23. Locknuts
24. Rear axle

25. Axle housing
26. Brake cable adjusters
27. Collars
28. Springs
29. Rear brake/parking brake cable
30. Rear brake pedal cable



completely, there will be no initial resistance at the brake lever.

- b. Open the bleed valve 1/4 turn and allow the lever to travel to its limit, then close the bleed valve and release the brake lever.
- c. Operate the brake lever several times and release it.
- d. Refill the master cylinder reservoir as necessary.
- e. Repeat Step 8B for the opposite brake line.

- f. Repeat Step 8B until there is a solid feel when the brake lever is operated and there are no bubbles being released from the system.

NOTE

When flushing the system, continue with Step 8A or 8B until the fluid expelled from the system is clean.

9. Remove the vacuum pump or container and hose from the system. Snap the bleed valve dust cap onto the bleed valve.
10. If necessary, add fluid to correct the level in the reservoir. It should be to the upper level line inside the master cylinder reservoir.
11. Install the diaphragm and cover. Tighten the screws securely.
12. Recheck the feel of the brake lever. It should be firm and offer the same resistance each time it's operated. If the lever feels spongy, check all of the hoses for leaks and bleed the system again.

REAR DRUM BRAKE

Removal

Refer to **Figure 47**.

1. Remove the right side rear wheel (Chapter Twelve).
2. Remove the right rear hub (A, **Figure 48**) as described in Chapter Twelve.
3. Remove the bolts and the brake drum cover (B, **Figure 48**).
4. Remove the brake drum cover O-ring (**Figure 49**), if necessary.
5. Remove the brake drum (A, **Figure 50**). If the brake drum is tight, loosen the brake cable adjusters (B, **Figure 50**) to withdraw the brake shoes away from the brake drum, then remove the brake drum.
6. Clean and inspect the brake drum cover and brake drum as described in this section.

Inspection

When measuring the brake drum in this section, compare the actual measurement to the new and service limit specification in **Table 1**. Replace the brake drum if it is out of specification or if it shows damage as described in this section.

1. Inspect the brake drum cover for cracks, warp or other damage.

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